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## THE MISSISSIPPI RIVER AS A TRADE ROUTE.\*

BY

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The history of the Mississippi River as a highway of commerce, like the history of many enterprises and nations, shows a period of rise, a period of maximum importance, and one of decline. The curve which could represent its variations would not be a regular one, but would display numerous interruptions, the expression of a temporary impetus given to traffic by certain combinations of favourable circumstances, or of a reversal in the progress of trade. During the middle third of the last century the traffic along the river increased rapidly. No competitor to the river as a path of travel and transportation between the interior and the Gulf seaboard existed. Towards the end of this period a reality and a superstition checked the growth of the river transportation. A railroad to New Orleans, constructed about the year 1865, opened another route to the Gulf, and turned some of the products of transportation from the old river route. At nearly the same time there seems to have been a belief among the merchants and traders in grain that the transit of grain through zones of warmer weather was injurious to that staple. During 1869, the St. Louis Grain Association determined to test the sense of this belief, and planned to ship a cargo of grain to Liverpool each week during the summer. About 500,000 bushels of wheat were shipped, and arrived at the port in good condition. As far as the climate was concerned, there was no longer a barrier to the shipment of grain *via* the Gulf. The cost of transporting, loading, and unloading, and the rate of insurance for a cargo from St. Louis to Liverpool, were reckoned at \$.37 per bushel—about the same price as is recorded to be the rate, now, from Dubuque to New York *via* Chicago. Another event which made these years a transition period in shipment was the change in the manner of transportation along the river itself during the years 1867 to 1869. The old manner of shipment by steamboats, as they chanced to come along, was uncertain, and it was also laborious. It was necessary to put the grain in sacks—in part to expedite the loading and unloading, but largely because the storage conveniences of the river boats demanded it.

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\* Compiled in part from the Reports of the Mississippi River Commission.

About this time barge lines began to be organized, and the shipment of grain in bulk was made possible. The towing of several barges filled with wheat and hastening to New Orleans gave added dignity and a new importance to the grain route down the Mississippi. Notwithstanding all this, during the years which followed, when the shippers were free from the superstitions of the warmer zones' effect on the grain and with the increased possibilities of river shipment, much of the grain was freighted overland from St. Louis to New York and there loaded for foreign trade. The shallow water in the distributaries of the river, which did not allow vessels of over 15-feet draft to enter the Passes, was detrimental to the Mississippi as a highway for grain. The St. Louis Grain Association, in proving the worthlessness of the fear of a warmer climate, demonstrated that, on account of the small depth of water in the Passes, the river port could not compete with any show of success with the cities along the Atlantic seaboard. In 1879, Captain Eads, by means of the jetties in the South Pass, secured a deep-water channel which allowed the passage of vessels of 26-feet draft. Now began another period in river transportation. A very large increase in the total number of bushels of grain exported by river in the two or three years following 1879 is recorded. In 1880, one-third of the total grain shipments from St. Louis was sent down the river. For 1879 the percentage was 18.

An interesting compilation in the form of a table is printed in the Mississippi River Commission Report for the year ending June, 1901 (p. 38). This table shows the character and amounts of the river business for the port of St. Louis during the years 1865 to 1900, inclusive. There has been during these years a rather persistent decrease in the amount of river traffic. The number of boats arriving at St. Louis in the five-year period from 1896 to 1900 was 31.6 per cent. less than for the five-year period from 1865 to 1869. There is also shown in the table a decrease of 39 per cent. in the total tonnage of freight, received and shipped, from the five-year period 1871-1875 to the five-year period 1896-1900. The ratio of the river traffic in grain to the entire grain traffic shows many fluctuations. The percentages of the year 1881 (37) and of 1880 (32.6) marked the upper range. These are much in excess of the other years, and record the first rush of traffic following the location of the jetties. For 1900 the percentage was 6.4. Since 1876 but two years show a smaller percentage—5.4 for 1899, and 5.7 for 1895. The freight rates per bushel of wheat, from St. Louis to Liverpool *via* the river and New Orleans and also between the same points *via* New York,

are tabulated. These rates cover the period from 1883 to 1900. The river-route rates range from 19.6 cents in 1883 to 11.64 cents in 1894. During 1900 the rate was 14.64 cents per bushel. The route rates *via* New York ranged from 27 cents in 1883 to 18.41 in 1900. It is noticeable that the differences in the rates for the two routes have grown persistently less during this period; and the least difference in any year of the record was in 1900—a difference of 3.77 cents. It may be that this lessening difference in transportation rates is a reason for a portion of the decrease in river traffic. The difference in price between the two routes may now be so small that it is counterbalanced by the difference in time. The discussion of the table in the Report ends with this statement:

On the whole, the decline in volume of river traffic at the port of St. Louis has not been as great as commonly believed, and is still a very important factor in the problem of cheap transportation, which becomes more and more imperative as margins of profit in trade and manufacturing grow smaller. The inevitable result must be an increasing use of the river as a commercial highway.

There seems to be no warrant for the optimism of this last sentence, except the tendency of men to see things as they want them to be.

It has been shown\* that during the ten-year period from 1890 to 1900 there has been a gain in the total tonnage of vessels entered and cleared at the port of New Orleans. This gain amounted to 66 per cent. In this same ten-year period seven Atlantic ports show a gain of 48 per cent., and five Gulf ports a gain of 111 per cent.

The absolute gain of the vessel tonnage of the seven Atlantic ports named was  $2\frac{1}{2}$  times the absolute increase of the tonnage of vessels that visited the five Gulf cities, but the percentage increase of the Gulf ports was  $2\frac{1}{2}$  the percentage growth at the Atlantic cities. . . . There is no probability that the Gulf cities will ever surpass the North Atlantic cities in the total volume of trade, but the redistribution of American trade now in progress will give the Gulf cities a greater share than they have had or now enjoy.

During the same ten-year period that yielded a gain in the commerce of New Orleans of 66 per cent. there was a loss of river shipments at St. Louis of 60 per cent. St. Louis is not the only port along the Mississippi River with traffic connections by water with New Orleans; but inasmuch as it is the dominant centre of the Mississippi Basin, any loss in its river traffic must reflect a similar loss in the total sum of river traffic. The gain of 66 per cent. at New Orleans could not easily result from an increase in the traffic of other riparian ports while the percentage of loss at St. Louis was so large. A tabulated statement of the traffic passing the port of Louisville, Kentucky, on the Ohio River, is published in the Reports of the Mississippi River Commission (1901, 40). The year 1900 showed a loss of 40 per cent over the year 1890 in the total amount of freight

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\* Johnson, E. R. Report of the Eighth International Geographic Congress held in the United States, 1904, p. 817.

of all kinds. From 1880 to 1890 there was a gain of such moment that the five-year period 1896-1900 shows a gain over the five-year period 1880-1884. The movement towards New Orleans, in other words, must be an overland traffic at the expense of the river line. Whether this decline in the river trade will persist or whether some new feature in the future will restore to the river its prestige is problematical. The railroad lines to New Orleans, which even now promise to be more numerous, are likely to be persistent and damaging competitors to the slower and more uncertain waterway route. Several factors, however, are making for an increased use of the river as a highway:

1. The maintenance of a low-water channel. In 1896 the project of sustaining dredges which should operate during the low-water season from July to January was adopted. It was the plan to maintain a standard channel of 9 feet of depth, and with a width of 250 feet, from Cairo to the Gulf. During 1899 a navigable channel of 8½ feet was maintained from Cairo to New Orleans. This work was accomplished easily by five dredges, one or more of them being in operation from August 11 to November 26. The engineers in charge of this work have concluded that the successful opening through a bar depends largely upon two factors, only one of which it is in their power to control. The factor that is beyond their control is the water condition presented by the season. If the stage of the river remains constant or steadily falls, a good channel, once opened, will remain good. If, however, there is a rapid decline in the stage of the river, the increased deposition of sediment is liable to refill the channels. The second factor is the skill with which a location is made. If a channel is located on lines that coincide with a river crossing, the river will probably assume that direction and improve the channels. With a bar blocking the river crossing and diverting somewhat the position of the thread of the river, considerable skill is demanded in determining the proper location for the channel. During 1900 a channel of 10½ feet was maintained; during 1901, 9 feet; 1902, 9 feet; 1903, 9 feet until December 5. The low-water seasons of 1903 and 1904 show some interesting comparisons. The high water of the spring of 1903 was expected by the engineers to produce an unfavourable effect on the low-water channel. As the amount of sediment a river can carry depends largely on its volume and speed, it was natural to suppose that on the decline of an excessive flood more obstructing bars would result than during a season of lesser flood. The 1904 flood was a flood of almost equal magnitude to that of the previous season; but, follow-

ing so closely after the 1903 flood, its importance and destructiveness suffered considerably by arriving before the river conditions and the riparian dwellers had become wonted to lesser heights. The conditions following the floods were, however, very diverse. The decline of the 1903 flood was a gradual one; while that of the 1904 flood was sudden. The result of these two conditions on the amounts of dredging is marked. No dredging during 1903 was necessary until about December 5; during 1904 dredging was begun about August 22. In the latter case a low stage was reached early in the season. On August 22, when dredging began in 1904, the river had fallen at Vicksburg 23 feet since July 24, or from 54 feet to 31 (Natchez datum). During the same dates of 1903 it fell but 2 feet, or from 41 feet to 39. The dredging height, 31 feet, of the season of 1904 was not reached during 1903 until November 25. So open was the river during this latter year that the engineers became over-confident and considered their work for the season done. This resulted in the stoppage of navigation earlier than is customary. A combination of circumstances, growing, mostly, out of relaxed vigilance, coincident with the sudden fall of water early in December, put a stop to navigation. The engineers account for this failure to keep an open way by the following reasons: The season was considered closed, there was a scarcity of coal, numerous accidents occurred, severe storms and freezing weather followed. Such experiences are salutary in the long run, in that as a result of them recurrences are the more carefully guarded against. However, during a limited time subsequent to the disaster such relapses of the river tend to decrease the confidence of the navigators and shippers in the work that is in progress.

2. The survey for a 14-foot waterway. The River and Harbor Act of June, 1902, provided for the consideration of a waterway 14 feet deep, from the mouth of the Illinois, *via* the Mississippi, to St. Louis, in connection with a 14-foot waterway from Lockport, Illinois, to St. Louis. An examination and investigation is now in progress; plans are being prepared, and the cost estimated for such a course. It is likely, in case such a course is declared feasible and put in operation, that some addition, not large, to the traffic of the Mississippi River will result therefrom. In this same connection, Miss Semple\* states that a proposition was recently made to the United States Government by the president of a large railroad system having its terminus in St. Louis that the Government im-

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\* Semple, E. C. *American History and its Geographic Conditions.* 418.

prove the Mississippi River so as to secure a 12-foot waterway from the mouth of the Missouri to New Orleans.

3. Opening of the Panama Canal. It is not unlikely, with the redistribution of commercial activity in favour of the Gulf cities, and the possibilities of an Isthmian canal, which may further increase the importance of these cities, that an impetus may be given the river traffic and the decline in its freightage be checked.

Over against the items favourable to an increased river traffic may be placed the tortuous path of the river, the uncertainty at both the high and low water stages, and the slowness of river traffic in general. The distance from St. Louis to New Orleans by river is over two and a half times the mileage by rail; and this added to the slower rate of water traffic accentuates the difference in time. The ratio of time by land and by water is about as 1 to 10. During the year traffic is liable to be blocked through various contingencies. The winter season may be cold and icy; during the high water of the spring months, when the levees are full, the boats may be ordered to move at reduced speed, so as to prevent the wash of waves against the levees; and during the summer and fall some uncertainty may exist concerning an open waterway. An indication of the tendency of the times may be read in the retirement from business of the St. Louis and Mississippi Valley Transportation Company, which had been for years the principal carrier of grain and other freight between St. Louis and New Orleans. The Monongahela River Consolidated Coal and Coke Company purchased their entire equipment of three large tow-boats and thirty barges.

It must not be understood that the traffic of the river has declined beyond the point where the outlay for improvements of the navigability of the stream is not fully compensated by use. It is not the expectation that the decline will ever reach such a point. The river will, probably, always be a factor in the commerce of the Valley, although it is improbable that it will ever again attain to paramount importance.

*Worcester, Massachusetts.*